CLAIMS

1. A PWM inverter control method of a 2-level PWM control type which has a function of freely changing switching of switching units connected in series every set in a structure in which two switches including a switching unit and a rectifying unit connected in antiparallel are serially connected in plural sets,

wherein the switching of the switching units connected in series is limited by setting the number of switching operations and a timing to output an optional voltage in order not to converge a frequency component of a noise caused by the switching and setting a lower limit to the number of switching operations in order to prevent the number of switching operations from being excessively decreased in that case when an operation frequency of an inverter is low, and increasing the number of switching operations and a set value of the timing in a constant ratio to the operation frequency and setting an upper limit to the number of switching operations in such a manner that the number of switching operations does not exceed a certain set value when the operation frequency of the inverter is increased.

2. A PWM inverter control method of a multilevel PWM control type which has a function of freely changing switching of switching units connected in series every set and outputs a PWM pulse having at least three output levels in a structure in which at least four even-numbered switches including a switching unit and a rectifying unit connected in antiparallel are serially connected in plural sets,

wherein the switching of the switching units connected in series is limited by setting the number of switching operations and a timing to output an optional voltage in order not to converge a frequency component of a noise caused by the switching and setting a lower limit to the number of switching operations in order to prevent the number of switching operations from being excessively decreased in that case when

an operation frequency of an inverter is low, and increasing the number of switching operations and a set value of the timing in a constant ratio to the operation frequency and setting an upper limit to the number of switching operations in such a manner that the number of switching operations does not exceed a certain set value when the operation frequency of the inverter is increased.

3. The PWM inverter control method according to claim 1 or 2, wherein an upper limit value of the number of switching operations is set in such a manner that a time average of a switching loss generated by the switching unit is equal to or smaller than a certain set value.

4. The PWM inverter control method according to claim 1 or 2, wherein an upper limit value of the number of switching operations is set in such a manner that generation of heat of a PWM inverter is equal to or smaller than a certain set value.

5. The PWM inverter control method according to any of claims 1 or 2, wherein a frequency of the number of switching operations to be set is skipped in such a manner that a component of the frequency is not equal to a resonance frequency of a motor connected to an output side.